Sonia Cambiaso

Curriculum Vitae

Education

11/2021 – present	**PhD student**, PhD program in Physics and Nanoscience, Università degli Studi di Genova (UniGe), Department of Physics.
Supervisors:	Prof. Giulia Rossi and Dr. Davide Bochicchio
09/2019 – 10/2021	**Master's degree in Physics**, *110/110*, UniGe, Department of Physics.
09/2016 – 10/2019	**Bachelor's degree in Physics**, *105/110*, UniGe, Department of Physics.
Thesis title:	*Equilibrium crystal shape and Wulff's theorem* (thesis in Italian)
Supervisor:	Prof. Lorenzo Mattera
09/2011 – 07/2016	**Secondary school diploma:** Scientific High School, *100/100*.
	Liceo "O. Grassi" - Savona (Italy)

Master thesis

Title	*Development of a coarse-grained model of polydimethylsiloxane for the study of polymer nanocomposites*
Supervisors	Prof. Giulia Rossi and Dr. Davide Bochicchio

Other research experiences

03/2023 - 05/2023	Scientific research visit to the Institute of Biology and Chemistry of Proteins (CNRS-University of Lyon 1), Lyon, France.
	The visit took place from the 1st of March to the 31st of May 2023, in the Molecular Microbiology and Structural Biochemistry (MMSB) unit, under the supervision of Dr. Luca Monticelli.

Skills

Programming languages	Python, Bash, C++, MATLAB
Data analysis	Python (NumPy, SciPy, Pandas), Microsoft Excel, ROOT Data Analysis Framework, SciDAVis (Scientific Data Analysis and Visualization).
Techniques and software	Molecular dynamics, Coarse-grained modeling, Enhanced sampling techniques, GROMACS.
Operating systems	GNU/Linux, Windows, Mac OS.
Typesetting	Microsoft Office, LibreOffice, LaTeX.

Languages

- **English**
  Advanced
- **Italian**
  Mother tongue

Tutor activities

02/2022 Tutor activity (40 h) at the stage for high school students at the Department of Physics (UniGe).

10/2022 - 06/2023 Tutor teaching activity (50 h) for General Physics 2-3 courses at the Department of Physics (UniGe).

09/2023 - 06/2024 Tutor teaching activity (50 h) for General Physics 1 course at the Engineering Department DITEN (UniGe).

Schools and Conferences

04/2022 Poster presentation (*Modeling metal and oxide surfaces and nanoparticles at coarse-grained level*) at "Cluster-Surface Interaction Workshop 2022", Santa Margherita Ligure, Italy.

06/2022 Oral presentation (*Coarse grained approach to the study of intrusion extrusion phenomena in nanopores*) at the workshop "From biology to bioinspiration: theory, simulation, and experiments for biophysical systems", Poreta, Italy.

07/2022 CSC Summer School in High Performance Computing, Espoo, Finland, from 26/06/2022 to 05/07/2022.

10/2022 Poster presentation (*Coarse-grained model of functionalized Si-based nanoporous material*) at the "Seventh International Conference on Multi-functional, Hybrid and Nanomaterials", Genoa, Italy.

05/2023 Flash talk at Nanosafety Training School 2023, Venice, Italy, 15-19 May 2023.

06/2023 Poster presentation (*Grafting heterogeneities rule intrusion and extrusion in nanopores*) at "Fluids in porous materials: From fundamental physics to engineering applications", CECAM-HQ-EPFL, Lausanne, Switzerland.

08/2023 Poster presentation (*Coarse-grained simulations unveil the interactions of metal oxide nanoparticles with biological systems*) at EBSA Congress 2023, Stockholm, Sweeden.

09/2023 Oral presentation (*Grafting heterogeneities rule intrusion and extrusion in nanopores*) at CMD 30-Fismat 2023 conference, Milano, Italy.

06/2024 Poster presentation (*In silico study of chitosan interactions with lipid bilayers*) at the "XXVII Congresso Nazionale SIBPA 2024".

Scientific awards

20/06/2024 Best poster award at the "XXVII Congresso Nazionale SIBPA 2024".

Publications

10/2022 Cambiaso S., Rasera F., Rossi G. and Bochicchio D., *Development of a transferable coarse-grained model of polydimethylsiloxane*, Soft Matter, 2022, 18, 7887.

06/2024 Cambiaso S, Rasera F, Tinti A, Bochicchio D, Grosu Y, Rossi G, Giacomello A, *Local grafting heterogeneities control intrusion and extrusion in nanopores*, Communications Materials, 5(1), 100, 2024.

07/2024 Iannetti L, Cambiaso S, Rasera F, Giacomello A, Rossi G, Bochicchio D, Tinti A, *The surface tension of Martini 3 water mixtures*, accepted on The Journal of Chemical Physics.

Research

Links to research activities:

- Group website: https://www.nanobiocomp.com
- Personal research: PhDFirstYearReport.pdf, PhDSecondYearReport.pdf